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Remarks: General

The specification has been amended to add thereto a notation of the claim to benefit made in this application as to the prior U.S. provisional application.

The claims have been amended by rewriting Claims 1~12 and 43~47, and canceling Claims 13~42 and 48~49 without prejudice to or disclaimer of the subject matter thereof. No new matter is added by these amendments. These amendments to the claims are not related to patentability inasmuch as they are made solely for the purpose of removing non-elected subject matter from the scope of the claims.

A petition under 37 CFR §1.136 for a three-month extension of time to respond the Examiner's action is enclosed, the fee for which should be charged to Deposit Account No. 04-1928 (E.I. du Pont de Nemours and Company).

By Applicant's calculation, no fee is due by reason of this amendment to the claims. If any fee other than or in addition to the extension fee mentioned specifically above is required to authorize or obtain consideration of this response, please charge such fee to Deposit Account No. 04-1928.

Claims 1~12 and 43~47 are now active in the application. Applicant hereby requests reconsideration and further examination of the application in view of the reasons it has set forth below for allowance of the claims.

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Remarks: Detailed Action

I.

The Examiner has noted the use in the application of the trademark TEREthane, and, Applicant has, in view thereof, submitted an amended paragraph on page 3 of the specification in which the word has been capitalized and more suitable generic terminology has been provided.

II.

The Examiner has rejected Claims 1-3, 11-13, 44 and 47 under 35 U.S.C. §102 as being anticipated by WO 03/008,680 ("Sen"). Claim 13 has been canceled.

Sen discloses (1) a bicomponent fiber of a core/sheath construction in which the core comprises a thermoplastic elastomer, and the sheath comprises a homogeneously branched polyolefin; and (2) a biconstituent fiber in which one constituent comprises a thermoplastic elastomer, and the other constituent comprises a homogeneously branched polyolefin. The bicomponent fiber of Sen is thus defined by its core/sheath structure, and the structure of the biconstituent fiber of Sen is more particularly defined as being "a fiber comprising an intimate blend of at least two polymer constituents. The structure of the biconstituent fiber is an islands-in-the-sea construction." (Page 6/Lines 21-23)

Figures 1A-1F of US 6,225,243, as cited by Sen, illustrates several views of fibers from an end of the fiber looking down the length of the fiber. 1A is a side-by-side construction, and 1B-1E are core/sheath construction or a variety thereof. 1F is a view of a fiber having an islands-in-the-sea construction. All of these fibers have co-continuous domains, and, as a result, in the fibers of Sen the two polymeric components or constituents are present as co-continuous domains.

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The definitions in Sen of bicomponent and biconstituent fibers are consistent with the definitions of these terms as set forth in the Encyclopedia of Polymer Science and Technology, DOI: 10.1002/0471440264.pst250 (John Wiley & Sons. Inc. 2002), which states that

Bicomponent fibers consist of two polymers of the same generic class, e.g. nylon-6 and nylon-6,10; biconstituent fibers consist of two dissimilar generic polymers, e.g. nylon-6,6 and polyester. Both fiber types are made separately by melt-spinning the two different polymers through a common, specially designed spinneret such as the one in Figure 6 (155). The spinneret hole and block channels can be designed so that the two polymers emerge side by side, as sheath-core or conjugate fibers. The fibers are processed through conventional drawing or spin-draw operations.

The fiber of Claims 1-12, and as present in Claims 43-47, is by contrast a fiber in which an olefinic thermoplastic, elastomeric polymer is dispersed in a matrix of a segmented thermoplastic, elastomeric polymer. The claimed fiber is therefore not a bicomponent or biconstituent fiber as described in Sen because it does not have any co-continuous domains. Applicant's fiber bears closer connection to a filled polymer where, in the instant case, the filler is another polymer. The olefinic thermoplastic elastomer as used in the fiber of this invention is present as particulate matter in the matrix of the segmented thermoplastic elastomeric polymer, and is therefore present as a discontinuous domain rather than as a continuous domain as taught by Sen. Sen does not disclose or suggest anything about a fiber in which the recited materials are used in connection with a construction in which an olefinic thermoplastic, elastomeric polymer is dispersed in a matrix of a segmented thermoplastic, elastomeric polymer

In view of the distinctions between Sen and the subject matter of Claims 1-12 and 43-47 as discussed above, Applicant

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respectfully requests that the Examiner withdraw the rejection of those claims under 35 U.S.C. §102.

III.

The Examiner has rejected Claims 4~6 under 35 U.S.C. §103(a) as being unpatentable over Sen in view of US 6,380,290 ("Bonte").

Bonte discloses a segmented polyetherester copolymer composition having improved thermooxidative stability as imparted by a stabilizer of a selected combination of phenolic antioxidants and aromatic amines. This composition is needed for molded automotive parts that must exhibit superior flexibility and deformation without fracture over a long lifetime.

Bonte does not disclose or suggest anything about blending this segmented polyetherester copolymer with an olefinic thermoplastic, elastomeric polymer; or about the use of this segmented polyetherester copolymer, or any other material, for the preparation of a fiber. Bonte therefore offers nothing that serves to overcome the deficiency of Sen as a disclosure or suggestion of the fiber in Claims 4~6, and Applicant therefore respectfully requests that the Examiner withdraw the rejection of those claims under 35 U.S.C. §103(a).

IV.

The Examiner has rejected Claims 7~10 and 44~46 under 35 U.S.C. §103(a) as being unpatentable over Sen in view of WO 93/15251 ("Gessner").

Gessner discloses a nonwoven fabric produced by melt spinning substantially continuous filaments of a thermoplastic olefin-based elastomer. Although a polyetherester elastomeric polymer is disclosed as a blend component from which such filaments may be

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spun (11/15), nothing further is taught or suggested by Gessner about the structural nature of the filament that might be prepared from such blend of components. Such a blend is not used in any of the examples in this reference. Gessner thus does not teach or suggest that a fiber may be prepared in which an olefinic thermoplastic, elastomeric polymer is dispersed in a matrix of a segmented thermoplastic, elastomeric polymer.

Gessner therefore offers nothing that serves to overcome the deficiency of Sen as a disclosure or suggestion of the fiber in Claims 7~10 and 44~46, and Applicant therefore respectfully requests that the Examiner withdraw the rejection of those claims under 35 U.S.C. §103(a).

V.

Applicant has reviewed the references that have been made of record but are not relied on, and submits that they are of no greater pertinence to the pending claims than the references discussed in detail above.

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In view of the foregoing, Applicant submits that all of the Examiner's objections and rejections have been properly traversed, and that the pending claims are in condition for allowance, request for which is hereby respectfully made.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John A. Langworthy", is written over a horizontal line. The signature is stylized with large, flowing loops.

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Appendix A
Marked-Up Version of
Original Form of Deleted Paragraph,
Showing Changes Thereto from Which
Replacement Paragraph is Derived

Page 3:
paragraph beginning at line 11 and
ending at line 21

Thermoplastic elastomers suitable for use in the fibers of this invention include those made up of two types of units: (1) a generally amorphous segment that is soft in nature (e.g., a polydiol such as ~~Terethane~~ TERETHANE® polymer ether glycol), and (2) a generally crystalline and/or hard segment that serves as an anchor for the soft segment. A thermoplastic elastomer comprising soft segments and hard segments may also be referred to as a segmented thermoplastic elastomer, and is sometimes also referred to as a block copolymer. Generally, the soft-segment molecular weight is predetermined by the fact that its length is defined as the soft blocks are extended by chain extenders, and then separated by hard blocks in the same chain.

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Appendix B

(i) Amendments
in marked-up form to
Claims 1-12 and 43-47, and

(ii) Status of all other claims

1. (currently amended) A fiber, ~~tape or film~~ comprising (a) a segmented thermoplastic, elastomeric polymer, and (b) an uncrosslinked olefinic thermoplastic, elastomeric polymer, wherein the olefinic thermoplastic, elastomeric polymer is dispersed in a matrix of the segmented thermoplastic, elastomeric polymer.

2. (currently amended) A fiber, ~~tape or film~~ according to Claim 1 wherein the segmented thermoplastic, elastomeric polymer is selected from the group consisting of poly(ether ester), poly(ester ester), poly(ester amide), and poly(ether amide).

3. (currently amended) A fiber, ~~tape or film~~ according to Claim 1 wherein the segmented thermoplastic, elastomeric polymer is poly(ether ester).

4. (currently amended) A fiber, ~~tape or film~~ according to Claim 2 wherein the poly(ether ester) comprises polybutyleneterephthalate and polytetramethyleneoxide.

5. (currently amended) A fiber, ~~tape or film~~ according to Claim 4 wherein the weight content of polybutyleneterephthalate is from about 10% to about 70% and the weight content of polytetramethyleneoxide is from about 30% to about 90%.

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6. (currently amended) A fiber, ~~tape or film~~ according to Claim 2 wherein the poly(ether ester) comprises polybutyleneterephthalate and repeat units of 3-methyl-tetrahydrofuran and tetrahydrofuran.

7. (currently amended) A fiber, ~~tape or film~~ according to Claim 1 wherein the olefinic thermoplastic, elastomeric polymer is a propylene polymer.

8. (currently amended) A fiber, ~~tape or film~~ according to Claim 7 wherein the crystallinity of the propylene polymer is from about 10% to about 40%.

9. (currently amended) A fiber, ~~tape or film~~ according to Claim 7 wherein the propylene polymer is ethylene/propylene copolymer.

10. (currently amended) A fiber, ~~tape or film~~ according to Claim 7 wherein the propylene polymer is propylene homopolymer.

11. (currently amended) A fiber, ~~tape or film~~ according to Claim 1 wherein the olefinic thermoplastic, elastomeric polymer is an ethylene/C₄₋₂₀ copolymer.

12. (currently amended) A fiber, ~~tape or film~~ according to Claim 1 which comprises the olefinic thermoplastic, elastomeric polymer in an amount of from about 3% to about 80% by weight.

13 ~ 42. (canceled).

43. (currently amended) A yarn prepared from a fiber according to Claim 1, ~~16 or 28~~.

44. (currently amended) A fabric prepared from a fiber according to Claim 1, ~~16 or 28~~.

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45. (currently amended) A garment prepared from a fiber according to Claim 1, ~~16 or 28~~.

46. (currently amended) In an article for human hygiene, a stretchable band prepared from a fiber according to Claim 1, ~~16 or 28~~.

47. (currently amended) A fiber, ~~tape or film~~ according to Claim 1 further comprising a surfactant or compatibilizer.

48 ~ 49. (canceled).